

CURRICULUM VITAE

Jonathan Robert SECKL BSc, MBBS, MRCP (UK), PhD, FRCPE, FMedSci

AWARDS, PRIZES AND FELLOWSHIPS

- 1978 Filliter Prize (1st in Pathology and Microbiology MB).
- 1980 Hons Viva (Medicine).
- 1980 Magrath Scholarship/Fellowes Gold Medal (Medicine MB).
- 1980 The Achison Exhibition (Medicine).
- 1984 Sir Jules Thorn Trust Research Fellowship.
- 1989 Wellcome Trust/Royal Society of Edinburgh Senior Clinical Research Fellowship.
- 1993 Wellcome Trust Senior Research Clinical Fellowship Renewal
- 1993 FRCP Edin
- 1994 Norage Pharmacia Prize (best paper on brain aging)
- 1998 Society for Endocrinology Medal
- 1999 Mortyn Jones Memorial Lecturer
- 1999 Fellowship, Academy of Medical Sciences

PRESENT APPOINTMENTS

- 1997 Moncrieff-Arnott Professor of Molecular Medicine, University of Edinburgh.
- 1995 Chairman, Molecular Medicine Centre, University of Edinburgh.
- 1989 Honorary Consultant Physician (Endocrinology), Western General Hospital.

PREVIOUS APPOINTMENTS

- 1996-97 Professor of Endocrinology, University of Edinburgh.
- 1993-96 Senior Lecturer in Medicine, University of Edinburgh.
- 1989-97 Wellcome Trust/Royal Society of Edinburgh Senior Clinical Research Fellow.
- 1987-92 Visiting Scientist, MRC Brain Metabolism Unit, Edinburgh.
- 1987-89 University of Edinburgh, Department of Medicine, Lecturer in Medicine
- 1984-87 Charing Cross and Westminster Medical School, Research Fellow Neuroendocrinology.

EDITORIAL BOARDS

Endocrinology (US); Steroids (US); Journal of Neuroendocrinology; Journal of Endocrinology

KEY RELEVANT PRIMARY PUBLICATIONS IN PEER-REVIEWED JOURNALS (OF 155)

- Moisan M-P, Seckl JR and Edwards CRW (1990). 11 β -hydroxysteroid dehydrogenase mRNA expression and activity in rat hypothalamus, hippocampus and cortex. *Endocrinology* 127: 1450-1455.
- Moisan M-P, Seckl JR, Brett LP, Monder C, Agarwal AK, White PC and Edwards CRW (1990). 11 β -hydroxysteroid dehydrogenase mRNA expression, bioactivity and immunoreactivity in rat cerebellum. *J Neuroendocrinol* 2: 853-858.
- Moisan M-P, Edwards CRW and Seckl JR (1992). Ontogeny of 11 β -hydroxysteroid dehydrogenase bioactivity and messenger RNA expression in rat brain and kidney. *Endocrinology* 130: 400-404.
- Moisan M-P, Edwards CRW and Seckl JR (1992). Differential promoter usage by the rat 11 β -hydroxysteroid dehydrogenase gene. *Molecular Endocrinol* 6: 1082-1087.
- Seckl JR, French KL, O'Donnell D, Meaney MJ, Yates C and Fink G (1993). Glucocorticoid receptor gene expression is unaltered in hippocampal neurons in Alzheimer's disease. *Molec Brain Res* 18: 239-245.
- Benediktsson R, Lindsay R, Noble J, Seckl JR and Edwards CRW (1993). Glucocorticoid exposure in utero: a new model for adult hypertension. *Lancet* 341: 339-341.
- Edwards CRW, Benediktsson R, Lindsay R and Seckl JR (1993). Dysfunction of the placental glucocorticoid barrier: a link between fetal environment and adult hypertension? *Lancet* 341: 355-357.
- Brown RW, Chapman, KE, Edwards CRW and Seckl JR (1993). Human placental 11 β -hydroxysteroid dehydrogenase: partial purification of and evidence for a distinct NAD-dependent isoform. *Endocrinology* 132: 2614-2621.
- Low SC, Assaad SN, Rajan V, Chapman KE, Edwards CRW and Seckl JR (1993). Regulation of 11 β -hydroxysteroid dehydrogenase by sex steroids in vivo: further evidence for the existence of a second dehydrogenase in rat kidney. *J Endocrinol* 139: 27-35.

- Leckie C, Chapman KE, Edwards CRW and Seckl JR (1995). LLC-PK₁ cells model 11 β -hydroxysteroid dehydrogenase type 2 regulation of glucocorticoid access to renal mineralocorticoid receptors. *Endocrinology* **136**: 5561-5569.
- Rajan V, Edwards CRW, Seckl JR (1996). 11 β -hydroxysteroid dehydrogenase in cultured hippocampal cells reactivates inert 11-dehydrocorticosterone, potentiating neurotoxicity. *J Neuroscience* **16**: 65-70.
- Brown RW, Chapman KE, Edwards CRW and Seckl JR (1996). Purification of 11 β -hydroxysteroid dehydrogenase type 2 from human placenta. *Biochem J* **313**: 997-1005.
- Brown RW, Kotolevtsev Y, Leckie C, Lindsay RS, Lyons V, Murad P, Mullins JJ, Chapman KE, Edwards CRW and Seckl JR (1996). Isolation and cloning of human placental 11 β -hydroxysteroid dehydrogenase-2 cDNA. *Biochem J* **313**: 1007-1017.
- Brown RW, Diaz R, Robson AC, Kotolevtsev Y, Mullins JJ, Kaufman MH and Seckl JR (1996). The ontogeny of 11 β -hydroxysteroid dehydrogenase type 2 and mineralocorticoid receptor gene expression reveal intricate control of glucocorticoid action in development. *Endocrinol* **137**: 794-797.
- Voice M, Seckl JR and Chapman KE (1996). The sequence of 5'-flanking DNA from mouse 11 β -hydroxysteroid dehydrogenase type 1 and analysis of putative transcription factor binding sites. *Gene* **181**: 233-235.
- Lindsay RS, Lindsay RM, Edwards CRW and Seckl JR (1996). Inhibition of 11 β -hydroxysteroid dehydrogenase in pregnant rats and the programming of blood pressure in the offspring. *Hypertension* **27**: 1200-1204.
- Voice M, Seckl JR, Edwards CRW and Chapman KE (1996). 11 β -hydroxysteroid dehydrogenase type 1 expression in 2S-FAZA hepatoma cells is hormonally-regulated: a model for the study of hepatic corticosteroid metabolism. *Biochem J* **317**: 621-625.
- Waddell B, Benediktsson R and Seckl JR (1996). 11 β -hydroxysteroid dehydrogenase type 2 in the rat corpus luteum: induction of mRNA expression and bioactivity coincident with luteal regression. *Endocrinology* **137**: 5386-5391.
- Lindsay RS, Lindsay RM, Waddell B and Seckl JR (1996). Programming of glucose tolerance in the rat: role of placental 11 β -hydroxysteroid dehydrogenase. *Diabetologia* **39**: 1299-1305.
- Rose KR, Stapleton G, Kiely M-P, Russell DW, Björkheim I, Seckl JR, Lathe R (1997). Cyp7b, a novel brain cytochrome P450, catalyses the synthesis of neurosteroids 7 α -hydroxy DHEA and 7 α -hydroxypregnenolone. *Proc Natl Acad Sci USA* **94**: 4925-4930.
- Kotolevtsev Y, Holmes MC, Burchell A, Houston PM, Schmoll D, Jamieson PM, Best R, Brown R, Edwards CRW, Seckl JR and Mullins JJ (1998). 11 β -hydroxysteroid dehydrogenase type 1 knockout mice show attenuated glucocorticoid inducible responses and resist hyperglycaemia on obesity or stress. *Proc Natl Acad Sci USA* **95**: 14924-14929.
- Diaz R, Brown R, Seckl JR (1998). Ontogeny of mRNAs encoding glucocorticoid and mineralocorticoid receptors and 11 β -HSDs in prenatal rat brain development reveal complex control of glucocorticoid action. *J Neurosci* **18**: 2570-2580.
- Napolitano A, Voice M, Edwards CRW, Seckl JR and Chapman KE (1998). 11 β -hydroxysteroid dehydrogenase type 1 in adipocytes: expression is differentiation-dependent and hormonally-regulated. *J Steroid Biochem Molec Biol* **64**: 251-260.
- Waddell B, Benediktsson R, Brown R and Seckl JR (1998). Tissue-specific mRNA expression of 11 β -hydroxysteroid dehydrogenase types 1 and 2 and the glucocorticoid receptor within rat placenta suggest exquisite local control of glucocorticoid action. *Endocrinology* **139**: 1517-1523.
- Nyirenda M, Lindsay RS, Kenyon CJ, Burchell A and Seckl JR (1998). Glucocorticoid exposure in late gestation permanently programmes rat hepatic phosphoenolpyruvate carboxykinase and glucocorticoid receptor expression and causes glucose intolerance in adult offspring. *J Clin Invest* **101**: 2174-2181.
- Robson AC, Leckie C, Seckl JR and Holmes MC (1998). Expression of 11 β -hydroxysteroid dehydrogenase type 2 in the postnatal and adult rat brain. *Molec Brain Res* **61**: 1-10.
- Jamieson PM, Chapman KE, Walker BR and Seckl JR (1999). Interactions between oestradiol and glucocorticoid regulatory effects on liver-specific glucocorticoid-inducible genes: possible evidence for a role of hepatic 11 β -hydroxysteroid dehydrogenase type 1. *J Endocrinol* **160**: 103-109.
- Jamieson PM, Chapman KE and Seckl JR (1999). Tissue- and temporal-specific regulation of 11 β -hydroxysteroid dehydrogenase type 1 by glucocorticoids in vivo. *J Steroid Biochem Molec Biol* **68**: 245-250.
- Kotolevtsev Y, Brown RW, Fleming S, Kenyon CJ, Edwards CRW, Seckl JR and Mullins JJ (1999). Hypertension in mice lacking 11 β -hydroxysteroid dehydrogenase type 2. *J Clin Invest* **103**: 683-689.
- Meaney MJ, Diorio J, Francis D, Weaver S, Yau JLW, Chapman KE, Seckl JR (2000). Postnatal handling increases the expression of cAMP-inducible transcription factors in the rat hippocampus: The effects of thyroid hormones and serotonin. *J Neurosci* **20**: 3926-35.
- Welberg LAM, Seckl JR and Holmes MC (2000). Inhibition of 11 β -hydroxysteroid dehydrogenase, the feto-placental barrier to maternal glucocorticoids, permanently programs amygdala glucocorticoid receptor mRNA expression and anxiety-like behavior in the offspring. *Eur J Neurosci* **12**: 1047-1054.
- Jamieson PM, Chaman KE, Walker BR and Seckl JR (2000). 11 β -hydroxysteroid dehydrogenase type 1 is a predominant 11 β -reductase in the intact perfused rat liver. *J Endocrinol* **165**: 685-692.
- Williams LJS, Lyons V, MacLeod I, Rajan V, Darlington GJ, Poli V, Seckl JR and Chapman KE (2000). C/EBP β regulates hepatic transcription of 11 β -hydroxysteroid dehydrogenase type 1; a novel mechanisms for cross-talk between the C/EBP and glucocorticoid signalling pathways. *J Biol Chem* **275**: 30232-30239.
- Harris HJ, Kotolevtsev Y, Mullins JJ, Seckl JR and Holmes MC (2001). 11 β -hydroxysteroid dehydrogenase type 1 null mice have altered hypothalamic-pituitary-adrenal axis activity: a novel control of glucocorticoid feedback. *Endocrinology* **142**: 114-120.

REVIEWS AND CHAPTERS

- Seckl JR (1993). 11 β -HSD isoforms and their implications for blood pressure regulation. *Eur J Clin Invest* **23**: 589-601.
- Seckl JR and Brown RW (1994). 11 β -hydroxysteroid dehydrogenase: on several roads to hypertension. *J Hypertens* **12**: 105-112.
- Seckl JR and Olsson T (1995). Glucocorticoids and the age-impaired hippocampus: cause or effect? *J Endocrinol* **145**: 201-211.
- Yau JLW and Seckl JR (1995). Corticosteroids and the brain. *Curr Opin Endocrinol Diabetes* **2**: 239-247.
- Edwards CRW, Benediktsson R, Lindsay RS and Seckl JR (1996). 11 β -hydroxysteroid dehydrogenases: Key enzymes in determining tissue-specific glucocorticoid effects. *Steroids* **61**: 263-269.
- Seckl JR (1997). 11 β -hydroxysteroid dehydrogenase: regulator of glucocorticoid action in the brain. *Front Neuroendocrinol* **18**: 49-99.
- Chapman KE, Kotolevtsev YV, Jamieson PM, Williams LJS, Mullins JJ and Seckl JR (1997). Tissue-specific modulation of glucocorticoid action by the 11 β -hydroxysteroid dehydrogenases. *Biochem Soc Trans* **25**: 583-587.
- Seckl JR and Chapman KE (1997). Medical and physiological aspects of the 11 β -hydroxysteroid dehydrogenase system. *Eur J Biochem* **242**: 361-364.

- Seckl JR and Nyirenda MJ (1999). Glucocorticoids, feto-placental 11 β -hydroxysteroid dehydrogenase and the programming of hypertension. *Handbook of Hypertension* Vol. 19: Development of the Hypertensive Phenotype; McCarty R, Blizard DA, Chevalier RL (eds); Elsevier, Amsterdam, pp103-136.
- Seckl JR (2000). 11 β -hydroxysteroid dehydrogenases. *Encyclopaedia of Stress*. Fink G (ed). (in press).
- Seckl JR and Walker BR (2001). 11 β -hydroxysteroid dehydrogenase type 1: a tissue-specific amplifier of glucocorticoid action. *Endocrinology* (in press).
- Seckl JR and Walker BR (eds) (2001). *Steroid Metabolism* (book). Bailliere's *Clinical Endocrinology and Metabolism* (in press).